Specific Emergency Exemption
FIFRA Section 18
2018

TRANSFORM® WG

Sulfoxaflor

EPA Reg. 62719-625

For control of the tarnished plant bug *Lygus lineolaris*
in cotton in Texas

For Re-Certification of EPA File Number: 17-TX-05

DOW AgroSciences LLC
18-TX-xxx

TEXAS DEPARTMENT OF AGRICULTURE
COMMISSIONER SID MILLER

December 20, 2017

Tawanda Maignan
Emergency Response Team Leader
Risk Integration, Minor Use, and Emergency Response Branch
Registration Division , U.S. EPA Office of Pesticide Programs
Phone: (703) 308-8050
Email: Maignan.Tawanda@epa.gov

Subject: Abbreviated application of Specific Exemption for Transform® WG for the control of the tarnished plant bug *(Lygus lineolaris)* in cotton in Texas.

Dear Ms. Maignan:

The Texas Department of Agriculture (TDA) requests a specific exemption under the provisions of Section 18 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended, for the use of Sulfoxaflor (Transform™ WG Insecticide, EPA Reg. No. 62719-625) to control the tarnished plant bug *(Lygus lineolaris)* in cotton in Texas. This request is permitted as outlined in the authorization letter dated April 28, 2017, for File Symbol 17TX05.

This is the second year TDA has requested a specific exemption for this product. Dow AgroSciences LLC has been notified and supports the registration. Dow AgroSciences LLC submitted a section 3 application during 2013 and received a PRIA date for 2015. This application is needed due to the ongoing issues with plant bugs in Texas cotton.

The Department asks that this specific exemption request be processed as an expedited request. Additional information is provided with this request. TDA certifies that:

The emergency condition outlined in the request dated April 20, 2017, still exists for 2018.
All information submitted in the 2017 request is still accurate. The proposed conditions of use are identical to those authorized in the April 28, 2017, authorization letter. A new alternative chemical or a nonchemical practice that offers a meaningful level of pest control for the tarnished plant bug has not become available for 2018. EPA has not made any extra conditions required for the re-certification for this use.

The Department incorporates by reference and relies on the application previously submitted to EPA under File Symbol 17TX05 to support this exemption request.

The Department certifies that pesticide applications will be made in accordance with, and incorporates by reference, all the use pattern provisions of its most recent specific exemption application for this use submitted in 2017 and the Agency's authorization letter of April 28, 2017, file symbol 17TX05. There are no changes and no threat to endangered species. Supporting information is attached for your review. Thank you for your timely consideration of our exemption request.

If you have any comments or questions regarding this submission, please contact Mr. Kevin Haack at 512-463-6982 or email: kevin.haack@texasagriculture.gov .

Sincerely yours,

Philip Wright
Administrator for Agriculture and Consumer Protection

PW/kh

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF CHEMICAL SAFETY
AND POLLUTION PREVENTION

Texas Department of Agriculture
P.O. Box 12847
Austin, TX 78711

Effective Date: APR 2 8 2017
Expiration Date: October 31, 2017
Report Due: April 30, 2018
File Symbol: 17TX05

Attn: Kevin Haack

The U.S. Environmental Protection Agency hereby issues a specific exemption under the provisions of Section 18 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended, to the Texas Department of Agriculture for the use of sulfoxaflor (CAS Reg. No. 946578-00-3) on cotton to control tarnished plant bug (*Lygus lineolaris*) in Texas. This specific exemption is subject to the conditions set forth in your request dated April 20, 2017, as well as the following conditions, modifications and restrictions:

1. The Texas Department Agriculture (TDA) is responsible for ensuring that all provisions of this specific exemption are met. TDA is also responsible for providing information in accordance with 40 CFR 166.32(b). Accordingly, a report summarizing the results of this program must be submitted to EPA Headquarters and the EPA Region 6 Office within 6 months following the expiration of this exemption or prior to requesting a subsequent specific exemption for this use. In accordance with 40 CFR 166.32(a), these offices shall also be immediately informed of any adverse effects resulting from the use of this pesticide in connection with this exemption.

2. The registered product, Transform® WG Insecticide (EPA Reg. No. 62719-625, containing 50% sulfoxaflor), manufactured by Dow AgroSciences, may be applied. All applicable directions for use, restrictions, and precautions on the EPA-registered product label including Worker Protection Standards must be followed, as well as those outlined on the Section 18 use directions submitted with your request, unless otherwise modified in this authorization document.

3. Foliar applications may be made by ground or air at a rate of 1.5-2.25 oz. of product (0.047-0.071 lb a.i.) per acre. A maximum of 4 applications may be made per year, but no more than 8.5 oz. of product (0.266 lb a.i.) may be applied per acre per year.

4. To minimize spray drift and potential exposure of bees when foraging on plants adjacent to treated fields, applications are prohibited when wind speeds are above 10 miles per hour (mph).

5. Retreatments are prohibited within 5 days of application. A restricted entry interval (REI) of 24 hours applies to all applications.

6. Pre-harvest interval (PHI): Do not apply within 14 days of harvest.

7. A maximum of 4,000,000 acres of cotton fields may be treated in the following 93 Texas counties: Andrews, Armstrong, Atascosa, Austin, Bailey, Baylor, Bee, Borden, Brazoria, Briscoe, Brooks, Calhoun, Callahan, Cameron, Carson, Castro, Childress, Cochran, Coke, Coleman, Collingsworth, Colorado, Cottle, Crosby, Dallam, Dawson, Dickens, Donley, Duvall, Fayette, Fisher, Floyd, Foard, Fort Bend, Gaines, Garza, Goliad, Gonzales, Gray, Hale, Hall, Hansford, Hardeman, Hartley, Haskell, Hemphill, Hildago, Hockley, Howard, Hutchinson, Jackson, Jim Hogg, Jim Wells, Jones, Kent, King, Kleberg, Knox, Lamb, Lavaca, Lipscomb, Lubbock, Lynn, Martin, Matagorda, Mitchell, Moore, Motley, Nolan, Nueces, Ochiltree, Oldham, Parmer, Refugio, Roberts, Runnels, San Patricio, Scurry, Shackelford, Sherman, Starr, Stonewall, Swisher, Taylor, Terry, Throckmorton, Victoria, Washington, Wharton, Wheeler, Willacy, Wilson, and Yoakum.

8. **Environmental Hazards Statement**: "This product is highly toxic to bees exposed through contact during spraying and while spray droplets are still wet. This product may be toxic to bees exposed to treated foliage for up to 3 hours following application. Toxicity is reduced when spray droplets are dry. Risks to managed and native pollinators from contact with pesticide spray or residues can be minimized when applications are made before 7:00 am or after 7:00 pm local time or when the temperature is below 55 degrees Fahrenheit (°F) at the site of application."

9. **Advisory Pollinator Statement**: "Notifying known beekeepers within 1 mile of the treatment area 48 hours before the product is applied will allow them to take additional steps to protect bees. If known apiaries are within one mile of cotton fields intended for treatment, applications should be made within three hours of sunset during the flowering period. Prior to use of Transform® WG Insecticide, growers are advised to refer to and, where feasible, observe the cooperative standards outlined in the Texas Apiary Inspection Service (TAIS) for additional guidance and bee conservation stewardship efforts."

10. This specific exemption expires October 31, 2017.

11. Applications made in accordance with the above provisions are not expected to result in combined residues of sulfoxaflor, including its metabolites and degradates, in or on cotton commodities in excess of the following existing tolerances at 40 CFR at 180.668(a): cottonseed subgroup 20C at 0.20 ppm; cotton, gin byproducts at 6.0 ppm; cotton, hulls at 0.35 ppm. The Agency has determined that these levels are adequate to protect the public health.

12. This is the first year that TDA has requested a Section 18 emergency exemption for the use of sulfoxaflor on cotton to control tarnished plant bug. In the event that TDA requests this use pattern next year, the EPA has made a preliminary determination that this use is eligible for a streamlined application under the re-certification program (40 CFR 166.20(b)(5)) in 2018.

    Any future correspondence regarding this exemption should refer to file symbol 17TX05.

If you have any questions regarding this authorization, please contact Emergency Response Team member Tamica Cain (703-347-8110; cain.tamica@epa.gov) or the Emergency Response Team Leader, Tawanda Maignan (703-308-8050; maignan.tawanda@epa.gov).

Michael L. Goodis, Director
Registration Division
Office of Pesticide Programs

Date: 4/28/2017

cc: Jeffrey Lammers, USEPA Region 6- Regional Coordinator
Elizabeth Reyes, USEPA Region 6- Tribal Coordinator

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF CHEMICAL SAFETY
AND POLLUTION PREVENTION

Texas Department of Agriculture
P.O. Box 12847
Austin, TX 78711

Amendment Date:	MAY 12 2017
Authorization Date:	April 28, 2017
Expiration Date:	October 31, 2017
Report Due:	April 30, 2018
File Symbol:	17TX05-1

Attn: Kevin Haack

**********AMENDMENT**********

The U.S. Environmental Protection Agency hereby amends the specific exemption previously granted under the provisions of Section 18 of the Federal Insecticide, Fungicide, and Rodenticide Act, as amended, to the Texas Department of Agriculture for the use of sulfoxaflor (CAS Reg. No. 946578-00-3) on cotton to control tarnished plant bug (*Lygus lineolaris*) in Texas. This specific exemption is amended to increase the maximum number of cotton acres allowed to be treated from 4,000,000 acres to 5.5 million acres. This revision to the authorization letter of April 28, 2017 applies to condition #7 as follows:

7. A maximum of 5.5 million acres of cotton fields may be treated in Texas.

All other conditions and restrictions as stated in the authorization letter still apply.

If you have any questions regarding this emergency exemption, please contact Emergency Response Team member Tamica Cain (703-347-8110; cain.tamica@epa.gov) or the Emergency Response Team Leader, Tawanda Maignan (703-308-8050; maignan.tawanda@epa.gov).

Marion Johnson, Chief
Minor Use and Emergency Response Branch
Registration Division / Office of Pesticide Programs

Date: May 12, 2017

cc: Jeffrey Lammers, USEPA Region 6
Elizabeth Reyes, USEPA Region 6 Pesticide Tribal Coordinator

Dow AgroSciences

Dow AgroSciences LLC 9330 Zionsville Road Indianapolis, IN 46268-1054 USA

Transform® WG

EPA Reg. No: 62719-625

For Control of Plant Bugs in Cotton

Section 18 Emergency Exemption

File symbol: XXXXXX

FOR DISTRIBUTION AND USE ONLY IN TEXAS UNDER SECTION 18 EMERGENCY EXEMPTION.

This Section 18 Emergency Exemption is effective XXXXX and expires XXXXX.

- This labeling must be in the possession of the user at the time of application.
- It is in violation of federal law to use this product in a manner inconsistent with its labeling.
- Read the label affixed to the container for Transform® WG insecticide before applying. Carefully follow all precautionary statements and applicable use directions.
- Any adverse effects resulting from the use of Transform WG under this emergency exemption must be immediately reported to the Texas Department of Agriculture

Environmental Hazards Statement: This product is highly toxic to bees exposed through contact during spraying and while spray droplets are still wet. This product may be toxic to bees exposed to treated foliage for up to 3 hours following application. Toxicity is reduced when spray droplets are dry. Risks to managed and native pollinators from contact with pesticide spray or residues can be minimized when applications are made before 7:00 a.m. or after 7:00 p.m. local time or when the temperature is below 55 degrees Fahrenheit (°F) at the site of application.

Directions for Use

Pests and Application Rates:

Pests	Transform WG (oz/acre)
Plant bugs	1.5 – 2.25 (0.047 – 0.071 lb ai/acre)

Advisory Pollinator Statement: Notifying known beekeepers within 1 mile of the treatment area 48 hours before the product is applied will allow them to take additional steps to protect bees. If known apiaries are within one mile of cotton fields intended for treatment, applications should be made within three hours of sunset during the flowering period. Prior to use of Transform® WG Insecticide, growers are advised to refer to and, where feasible, observe the cooperative standard outlined in the Texas Apiary Inspection Service (TAIS) for additional guidance and bee conservation stewardship efforts.

Application Timing: Treat in accordance with local economic thresholds. Consult your Dow AgroSciences representative, cooperative extension service, certified crop advisor or state agricultural experiment station for any additional local use recommendations for your area.

Application Rate: Use a higher rate in the rate range for heavy pest populations. Two applications may be required for optimum tarnished plant bug control under high pest pressure or heavy immigration of plant bugs from other crops.

Spray Drift Management: Applications are prohibited above wind speeds of 10 miles per hour (mph).

Restrictions:

- **Preharvest Interval:** Do not apply within 14 days of harvest.
- **Minimum Treatment Interval:** Do not make applications less than 5 days apart.
- Do not make more than four applications per acre per year.
- Do not make more than two consecutive applications per crop.
- Do not apply more than a total of 8.5 oz of Transform WG (0.266 lb ai of sulfoxaflor) per acre per year.

R396-191
Approved: __/__/__
Replaces R396-171

Dow AgroSciences

Transform® WG

INSECTICIDE

ISOCLAST™ ACTIVE

For control or suppression of aphids, fleahoppers, plant bugs, stink bugs, whiteflies and certain psyllids, scales, and thrips on: canola (rapeseed) (subgroup 20A), root and tuber vegetables (crop groups 1A and 1B), potatoes (crop groups 1C and 1D), succulent, edible podded, and dry beans, triticale, and wheat.

Group	4C	INSECTICIDE

Active Ingredient:	
sulfoxaflor	50%
Other Ingredients	50%
Total	100%

Contains 50% active ingredient on a weight basis.

Keep Out of Reach of Children

DANGER
PELIGRO

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand the label, find someone to explain it to you in detail.)

First Aid

If in eyes: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then

First Aid (Cont.)

continue rinsing eye. Call a poison control center or doctor for treatment advice.

If swallowed: Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to by a poison control center or doctor. Do not give anything by mouth to an unconscious person.

NOTE TO PHYSICIAN: Probable mucosal damage may contraindicate the use of gastric lavage.

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-800-992-5994 for emergency medical treatment information.

Agricultural Use Requirements

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR Part 170. Refer to the label booklet under "Agricultural Use Requirements" in the Directions for Use section for information about this standard.

For additional Precautionary Statements, First Aid, Storage and Disposal and other use information see inside this label.

Notice: Read the entire label. Use only according to label directions. **Before using this product, read Warranty Disclaimer, Inherent Risks of Use, and Limitation of Remedies at end of label booklet. If terms are unacceptable, return at once unopened.**

In case of emergency endangering health or the environment involving this product, call 1-800-992-5994.

Agricultural Chemical: Do not ship or store with food, feeds, drugs or clothing.

EPA Reg. No. 62719-625 EPA Est. 67545-AZ-001 99075386

Produced for
Dow AgroSciences LLC
9330 Zionsville Road
Indianapolis, IN 46268

NET WEIGHT 8 LB

Table of Contents

Precautionary Statements

Hazard to Humans and Domestic Animals

DANGER

Corrosive. Causes Irreversible Eye Damage • Harmful If Swallowed

Do not get in eyes or on clothing.

Personal Protective Equipment (PPE)

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Shoes plus socks
- Protective eyewear

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

User Safety Recommendations

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.
- Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

Environmental Hazards

Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwaters.

Directions for Use

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your state or tribe, consult the agency responsible for pesticide regulation. Read all Directions for Use carefully before applying.

Agricultural Use Requirements

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR Part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE), and restricted entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 24 hours.

Agricultural Use Requirements (Cont.)

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is:

- Coveralls
- Shoes plus socks

Storage and Disposal

Do not contaminate water, food or feed by storage or disposal.

Pesticide Storage: Store in original container only.

Pesticide Disposal: Wastes resulting from the use of this product must be disposed of on site or at an approved waste disposal facility.

Container Handling: Nonrefillable container. Do not reuse or refill this container.

Triple rinse or pressure rinse container (or equivalent) promptly after emptying. **Triple rinse** as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. **Pressure rinse** as follows: Empty the remaining contents into application equipment or a mix tank. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 psi for at least 30 seconds. Drain for 10 seconds after the flow begins to drip. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures allowed by state and local authorities.

Product Information

Carefully read, understand and follow label use rates and restrictions. Apply the amount specified in the following tables with properly calibrated aerial or ground spray equipment. Prepare only the amount of spray solution required to treat the measured acreage. The low rates may be used for light infestations of the target pests and the higher rates for moderate to heavy infestations. Transform® WG insecticide may be applied in either dilute or concentrate sprays so long as the application equipment is calibrated and adjusted to deliver thorough, uniform coverage. Use the specified amount of Transform WG per acre regardless of the spray volume used.

Use Precautions

Integrated Pest Management (IPM) Programs

Transform WG is recommended for IPM programs in labeled crops. Apply Transform WG when field scouting indicates target pest densities have reached the economic threshold, i.e., the point at which the insect population must be reduced to avoid economic losses beyond the cost of control. Other than reducing the target pest species as a food source, Transform WG does not have a significant impact on most parasitic insects or the natural predaceous arthropod complex in treated crops, including big-eyed bugs, ladybird beetles, flower bugs, lacewings, minute pirate bugs, damsel bugs, assassin bugs, predatory mites or spiders. The feeding activities of these beneficials will aid in natural control of other insects and reduce the likelihood of secondary pest outbreaks. If Transform WG is tank mixed with any insecticide that reduces its selectivity in preserving beneficial predatory insects, the full benefit of Transform WG in an IPM program may be reduced.

Insecticide Resistance Management (IRM)

Transform WG contains a Group 4C insecticide. Insect biotypes with acquired resistance to Group 4C insecticides may eventually dominate the insect population if Group 4C insecticides are used repeatedly in the same field or area, or in successive years as the primary method of control for targeted species. This may result in partial or total loss of control of those species by Transform WG or other Group 4C insecticides.

To delay development of insecticide resistance, the following practices are recommended:

- Avoid consecutive use of insecticides on succeeding generations with the same mode of action (same insecticide subgroup, 4C) on the same insect species.
- Consider tank mixtures or premix products containing insecticides with different modes of action (different insecticide groups) provided the products are registered for the intended use.
- Base insecticide use upon comprehensive IPM programs.
- Monitor treated insect populations in the field for loss of effectiveness.
- Do not treat seedling plants grown for transplant in greenhouses, shade houses, or field plots.
- Contact your local extension specialist, certified crop advisor, and/or manufacturer for

insecticide resistance management and/or IPM recommendations for the specific site and resistant pest problems.
- For further information or to report suspected resistance, you may contact Dow AgroSciences by calling 800-258-3033.

Mixing Directions

Application Rate Reference Table

Application Rate of Transform WG (oz/acre)	Active Ingredient Equivalent (lb ai/acre)
0.75	0.023
1	0.031
1.5	0.047
1.75	0.055
2.25	0.071
2.75	0.086

Transform WG – Alone
Fill the spray tank with water to about 1/2 of the required spray volume. Start agitation and add the required amount of Transform WG. Continue agitation while mixing and filling the spray tank to the required spray volume. Maintain sufficient agitation during application to ensure uniformity of the spray mix. Do not allow water or spray mixture to back-siphon into the water source.

Transform WG - Tank Mix
When tank mixing Transform WG with other materials, conduct compatibility test (jar test) using relative proportions of the tank mix ingredients prior to mixing ingredients in the spray tank. If foliar fertilizers are used, the jar test should be repeated with each batch of fertilizer utilizing the mixing water source. Vigorous, continuous agitation during mixing, filling and throughout application is required for all tank mixes. Sparger pipe agitators generally provide the most effective agitation in spray tanks. To prevent foaming in the spray tank, avoid stirring or splashing air into the spray mixture.

Tank Mixing Restrictions:
DO NOT TANK MIX ANY PESTICIDE PRODUCT WITH TRANSFORM without first referring to the following website: isoclasttankmix.com
- This website contains a list of active ingredients that are currently prohibited from use in tank mixture with this product. Only use products in tank mixture with this product that: 1) are registered for the intended use site, application method and timing; 2) are not prohibited for tank mixing by the label of the tank mix product; and 3) do not contain one of the prohibited active ingredients listed on isoclasttankmix.com website.
- Applicators and other handlers (mixers) must access the website within one week prior to application in order to comply with the most up-to-date information on tank mix partners.
- Do not exceed specified application rates for respective products or maximum allowable Application rates for any active ingredient in the tank mix.
- It is the pesticide user's responsibility to ensure that all products in the mixtures are registered for the intended use. Users must follow the most restrictive directions and precautionary language of the products in the mixture (for example, first aid from one product, spray drift management from another).

Mixing Order for Tank Mixes: Fill the spray tank with water to 1/4 to 1/3 of the required spray volume. Start agitation. Add different formulation types in the order indicated below, allowing time for complete dispersion and mixing after addition of each product. Allow extra dispersion and mixing time for dry flowable products.

Add different formulation types in the following order:
1. Transform WG and other water dispersible granules
2. Wettable powders
3. Suspension concentrates and other liquids

Maintain agitation and fill spray tank to 3/4 of total spray volume. Then add:
4. Emulsifiable concentrates and water-based solutions
5. Spray adjuvants, surfactants and oils
6. Foliar fertilizers

Finish filling the spray tank. Maintain continuous agitation during mixing, final filling and throughout application. If spraying and agitation must be stopped before the spray tank is empty, the materials may settle to the bottom. Settled materials must be resuspended before spraying is resumed. A sparger agitator is particularly useful for this purpose.

Premixing: Dry and flowable formulations may be premixed with water (slurried) and added to the spray tank through a 20 to 35 mesh screen. This procedure assures good initial dispersion of these formulation types.

Application Directions

Not for Residential Use

Do not apply Transform WG in greenhouses or other enclosed structures used for growing crops.

Proper application techniques help ensure thorough spray coverage and correct dosage for optimum insect control. Apply Transform WG as a foliar spray at the rate indicated for target pest. The following directions are provided for ground and aerial application of Transform WG. Attention should be given to sprayer speed and calibration, wind speed, and foliar canopy to ensure adequate spray coverage.

Spray Drift Management

Wind: To reduce off-target drift and achieve maximum performance, apply when wind velocity favors on-target product deposition (approximately 3-10 mph). Do not apply when wind speed exceeds 10 mph as uneven spray coverage and drift may result.

Temperature Inversions: Do not make ground or aerial applications during a temperature inversion. Temperature inversions are characterized by stable air and increasing temperatures with height above the ground. Mist or fog may indicate the presence of an inversion in humid areas. The applicator may detect the presence of an inversion by producing smoke and observing a smoke layer near the ground surface.

Droplet Size: Use only medium or coarser spray nozzles (for ground and non-ULV aerial application) according to ASABE (S-572.1) definition for standard nozzles. In conditions of low humidity and high temperatures, applicators should use a coarser droplet size except where indicated for specific crops.

Ground Application

To prevent drift from groundboom applications, apply using a nozzle height of no more than 4 feet above the ground or crop canopy. Shut off the sprayer when turning at row ends. Risk of exposure to sensitive aquatic areas can be reduced by avoiding applications when wind directions are toward the aquatic area.

Row Crop Application

Use calibrated power-operated ground spray equipment capable of providing uniform coverage of the target crop. Orient the boom and nozzles to obtain uniform crop coverage. Use a minimum of 5 to 10 gallons per acre, increasing volume with crop size and/or pest pressure. Use hollow cone, twin jet flat fan nozzles or other atomizer suitable for insecticide spraying to provide a fine to coarse spray quality (per ASABE S-572.1, see nozzle catalogs). Under certain conditions, drop nozzles may be required to obtain complete coverage of plant surfaces. Follow manufacturer's specifications for ideal nozzle spacing and spray pressure. Minimize boom height to optimize uniformity of coverage and maximize deposition (optimize on-target deposition) to reduce drift.

Orchard/Grove Spraying Application

Dilute Spray Application: This application method is based upon the premise that all plant parts are thoroughly wetted, to the point of runoff, with spray solution. To determine the number of gallons of dilute spray required per acre, contact your state agricultural experiment station, certified pest control advisor, or extension specialist for assistance.

Concentrate Spray Application: This application method is based upon the premise that all the plant parts are uniformly covered with spray solution but not to the point of runoff as with a dilute spray. Instead, a lower spray volume is used to deliver the same application rate per acre as used for the dilute spray.

Aerial Application

Apply in a minimum spray volume of 3 gallons per acre. Mount the spray boom on the aircraft so as to minimize drift caused by wing tip or rotor vortices. Use the minimum practical boom length and do not exceed 75% of the wing span or 80% of the rotor diameter. Flight speed and nozzle orientation must be considered in determining droplet size. Spray must be released at the lowest height consistent with pest control and flight safety. Do not release spray at a height greater than 10 feet above the crop canopy unless a greater height is required for aircraft safety. When applications are made with a crosswind, the swath will be displaced downwind. The applicator must compensate for this displacement at the downwind edge of the application area by adjusting the path of the aircraft upwind. Do not apply when wind speed exceeds 10 mph.

Spray Adjuvants

The addition of agricultural adjuvants to sprays of Transform WG may improve initial spray deposits, redistribution and weatherability. Select adjuvants that are recommended and registered for your specific use pattern and follow their use directions. When an adjuvant is to be used with this product, Dow AgroSciences recommends the use of a Chemical Producers and Distributors Association certified adjuvant. Always add adjuvants last in the mixing process.

Chemigation Application
Transform WG may be applied through properly equipped chemigation systems for insect control in potatoes. Do not apply Transform WG by chemigation to other crops unless otherwise specified by a state-specific 24(c) label.

Use Directions for Chemigation: Transform WG may be applied through overhead sprinkler irrigation systems that will apply water uniformly, including center pivot, lateral move, end tow, side (wheel) roll, traveler, solid set, micro sprinkler, or hand move. Do not apply this product through any other type of irrigation system. Sprinkler systems that deliver a low coefficient of uniformity such as certain water drive units are not recommended.

For continuously moving systems, the mixture containing Transform WG must be injected continuously and uniformly into the irrigation water line as the sprinkler is moving. If continuously moving irrigation equipment is used, apply in no more than 0.25 inch of water. For irrigation systems that do not move during operation, apply in no more than 0.25 inch of irrigation immediately before the end of the irrigation cycle.

Chemigation Preparation: The following use directions are to be followed when this product is applied through irrigation systems. Thoroughly clean the chemigation system and tank of any fertilizer or chemical residues, and dispose of the residues according to state and federal laws. Flush the injection system with soap or a cleaning agent and water. Determine the amount of Transform WG needed to cover the desired acreage. Mix according to instructions in the Mixing Directions section above. Continually agitate the mixture during mixing and application.

Chemigation Equipment Calibration: In order to calibrate the irrigation system and injector to apply the mixture containing Transform WG, determine the following: 1) Calculate the number of acres irrigated by the system; 2) Calculate the amount of product required and premix; 3) Determine the irrigation rate and determine the number of minutes for the system to cover the intended treatment area; 4) Calculate the total gallons of insecticide mixture needed to cover the desired acreage. Divide the total gallons of insecticide mixture needed by the number of minutes (minus time to flush out) to cover the treatment area. This value equals the gallons per minute output that the injector or eductor must deliver. Convert the gallons per minute to milliliters or ounces per minute if needed. Calibrate the injector system with the system in operation at the desired irrigation rate. It is suggested that the injection pump/system be calibrated at least twice before operation, and the system should be monitored during operation.

Chemigation Operation: Start the water pump and irrigation system, and let the system achieve the desired pressure and speed before starting the injector. Check for leaks and uniformity and make repairs before any chemigation takes place. Start the injection system and calibrate according to manufacturer's specifications. This procedure is necessary to deliver the desired rate per acre in a uniform manner. When the application is finished, allow the entire irrigation and injection system to be thoroughly flushed clean before stopping the system.

Chemigation Restrictions:
- Lack of effectiveness or illegal pesticide residues in the crop can result from non-uniform distribution of treated water.
- If you have questions about calibration, contact state extension service specialists, equipment manufacturers or other experts.
- Do not connect an irrigation system used for pesticide application (including greenhouse systems) to a public water system unless the pesticide label-prescribed safety devices for public water systems are in place with current certification. Specific local regulations may apply and must be followed.
- A person knowledgeable of the chemigation system and responsible for its operation, or under the supervision of the responsible person, shall operate the system and make necessary adjustments should the need arise and continuously monitor the injection.
- Do not apply when wind speed favors drift beyond the area intended for treatment. End guns must be turned off during the application if they irrigate nontarget areas.
- Do not allow irrigation water to collect or run off and pose a hazard to livestock, wells, or adjoining crops.
- Do not enter treated area during the reentry interval specified in the Agricultural Use Requirements section of this label unless required PPE is worn.
- Do not apply through sprinkler systems that deliver a low coefficient of uniformity such as certain water drive units.

Chemigation Specific Equipment Requirements:
- The system must contain an air gap or approved backflow prevention device, or approved functional check valve, vacuum relief valve (including inspection port), and low-pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from back flow. Refer to the American Society of Agricultural

Engineer's Engineering Practice 409 for more information or state specific regulations.

- The pesticide injection line must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection chemical supply.
- A pesticide injection pump must also contain a functional interlock, e.g., mechanical or electrical to shut off chemical supply when the irrigation system is either automatically or manually shut down.
- The system must contain functional interlocking controls to automatically shut off the pesticide injection when the water pressure drops too low or water flow stops.
- Use of public water supply requires approval of a backflow prevention device or air gap (preferred) by both state and local authorities.
- Systems must use a metering device, such as a positive displacement injection pump (or flow meter on eductor) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock. An electric powered pump must meet Section 675 for "Electrically Driven or Controlled Irrigation Machines" NEC 70.
- To insure uniform mixing of the insecticide in the water line, inject the mixture in the center of the pipe diameter or just ahead of an elbow or tee in the irrigation line so that the turbulence created at those points will assist in mixing. The injection point must be located after all backflow prevention devices on the water line.
- The tank holding the insecticide mixture should be free of rust, fertilizer, sediment, and foreign material, and equipped with an in-line strainer situated between the tank and the injection point.

Rotational Crop Restrictions

The following rotational crops may be planted at intervals defined below following the final application of Transform WG at specified rates for a registered use.

Crop	Re-Planting Interval
Barley, triticale, wheat, canola (rapeseed) (subgroup 20A), potatoes (crop group 1C and 1D), root and tuber vegetables (crop group 1A and 1B), succulent, edible podded and dry beans.	no restrictions
all other crops grown for food or feed	30 days

Use Directions

Barley, Triticale and Wheat

Pests and Application Rates:

Pests	Transform WG (oz/acre)
Aphids, including Russian wheat aphid andgreenbug	0.75 – 1.5 (0.023 – 0.047 lb ai/acre)

Application Timing: Treat in accordance with local economic thresholds. Consult your Dow AgroSciences representative, cooperative extension service, certified crop advisor or state agricultural experiment station for any additional local use recommendations for your area.

Application Rate: Use a higher rate in the rate range for heavy pest populations.

Restrictions:

- **Preharvest Interval:** Do not apply within 14 days of grain or straw harvest or within 7 days of grazing, or forage, fodder, or hay harvest.
- **Minimum Treatment Interval:** Do not make applications less than 14 days apart.
- Do not make more than two applications per crop.
- Do not apply more than a total of 2.8 oz of Transform WG (0.09 lb ai of sulfoxaflor) per acre per year.
- If blooming vegetation is present 12 feet out from the downwind edge of the field, a downwind 12-foot on-field buffer must be observed.

Canola (Rapeseed) (Subgroup 20A)[1]

[1]Canola (rapeseed) (subgroup 20A) including borage, canola, crambe, cuphea, echium, flax seed, gold of pleasure, hare's ear mustard, lesquerella, lunaria, meadowfoam, milkweed, mustard seed, oil radish, poppy seed, rapeseed, sesame, sweet rocket, and cultivars, varieties and/or hybrids of these

Pests and Application Rates:

Pests	Transform WG (oz/acre)
Aphids	0.5 – 0.75 (0.016 – 0.023 lb ai/acre)

Application Timing: Treat in accordance with local economic thresholds. Consult your Dow AgroSciences representative, cooperative extension service, certified crop advisor or state agricultural experiment station for any additional local use recommendations for your area.

Application Rate: Use a higher rate in the rate range for heavy pest populations.

Restrictions:
- **Preharvest Interval:** Do not apply within 14 days of grain, straw, forage, fodder, or hay harvest.
- **Minimum Treatment Interval:** Do not make applications less than 14 days apart.
- Do not make more than two applications per year.
- Do not apply more than a total of 1.5 oz of Transform WG (0.046 lb ai of sulfoxaflor) per acre per year.
- Do not apply this product until after petal fall.
- If blooming vegetation is present 12 feet out from the downwind edge of the field, a downwind 12-foot on-field buffer must be observed.

Root and Tuber Vegetables (Crop Groups 1A and 1B)[1]

[1]Root and tuber vegetables (crop group 1) including bitter black salsify, carrot, celeriac, chayote (root), chicory, chufa, daikon, dasheen, edible burdock, garden beet, ginseng, horseradish, lobok, lo pak, oriental radish, parsnip, radish, red Chinese radish, red Japanese radish, rutabaga, salsify, skirret, Spanish salsify, sugar beet, turnip, turnip-rooted chervil, turnip-rooted parsley, white Chinese radish, white Japanese radish, winter radish, and other cultivars or hybrids of these

Pests and Application Rates:

Pests	Transform WG (oz/acre)
Aphids	0.75 – 1.5 (0.023 – 0.047 lb ai/acre)
Leafhoppers	1.5 – 2.75 (0.047 – 0.086 lb ai/acre)
silverleaf whitefly sweetpotato whitefly	2.0 – 2.75 (0.063 – 0.086 lb ai/acre)

Application Timing: Treat in accordance with local economic thresholds. Consult your Dow AgroSciences representative, cooperative extension service, certified crop advisor or state agricultural experiment station for any additional local use recommendations for your area. Two applications may be required for optimum control of whiteflies.

Application Rate: Use a higher rate in the rate range for heavy pest populations.

Restrictions:
- **Preharvest Interval:** Do not apply within 7 days of harvest.
- **Minimum Treatment Interval:** Do not make applications less than 7 days apart.
- Do not use on crops grown for seed.
- Do not make more than four applications per crop.
- Do not make more than two consecutive applications per crop.
- Do not apply more than a total of 8.5 oz of Transform WG (0.266 lb ai of sulfoxaflor) per acre per year.
- If blooming vegetation is present 12 feet out from the downwind edge of the field, a downwind 12-foot on-field buffer must be observed.

Potatoes (Crop Groups 1C and 1D)[1]

[1]Root and tuber vegetables (crop group 1) including arracacha, arrowroot, bitter black salsify, bitter cassava, chayote (root), Chinese artichoke, chufa, daikon, dasheen, edible canna, ginger, Jerusalem artichoke, leren, lobok, lo pak, potato, radish, sweet cassava, sweet potato, tanier, true yam, turmeric, yam, yam bean, and other cultivars or hybrids of these

Pests and Application Rates:

Pests	Transform WG (oz/acre)
aphids	0.75 – 1.5 (0.023 – 0.047 lb ai/acre)
Leafhoppers	1.5 – 2.25 (0.047 – 0.071 lb ai/acre)
Potato psyllid silverleaf whitefly sweetpotato whitefly	2.0 – 2.25 (0.063 – 0.071 lb ai/acre)

Application Timing: Treat in accordance with local economic thresholds. Consult your Dow AgroSciences representative, cooperative extension service, certified crop advisor or state agricultural experiment station for any additional local use recommendations for your area. Two applications may be required for optimum control of whiteflies.

Application Rate: Use a higher rate in the rate range for heavy pest populations.

Restrictions:

- **Preharvest Interval:** Do not apply within 7 days of harvest.
- **Minimum Treatment Interval:** Do not make applications less than 14 days apart.
- Do not make more than four applications per crop.
- Do not make more than two consecutive applications per crop.
- Do not apply more than a total of 8.5 oz of Transform WG (0.266 lb ai of sulfoxaflor) per acre per year.
- Do not apply this product until after petal fall.
- If blooming vegetation is present 12 feet out from the downwind edge of the field, a downwind 12-foot on-field buffer must be observed.

Succulent, Edible Podded and Dry Beans[1]

[1]Succulent, edible podded, and dry beans including adzuki bean, asparagus bean, bean, blackeyed pea, broad bean, chickpea, Chinese longbean, cowpea, fava bean, field bean, garbanzo bean, grain lupine, green lima bean, jackbean, kidney bean, lablab bean, lima bean, moth bean, mung bean, navy bean, pinto bean, rice bean, runner bean, snap bean, sweet lupine, sword bean, tepary bean, wax bean, white lupine, white sweet lupine, yardlong bean

Pests and Application Rates:

Pests	Transform WG (oz/acre)
aphids	0.75 – 1.0 (0.023 – 0.031 lb ai/acre)
plant bugs	1.5 – 2.25 (0.047 – 0.071 lb ai/acre)
Suppression only: brown stink bug southern green stink bug	2.0 – 2.25 (0.063 – 0.071 lb ai/acre)
thrips (suppression only)	2.25 (0.071 lb ai/acre)

Application Timing: Treat in accordance with local economic thresholds. Consult your Dow AgroSciences representative, cooperative extension service, certified crop advisor or state agricultural experiment station for any additional local use recommendations for your area.

Application Rate: Use a higher rate in the rate range for heavy pest populations.

Restrictions:

- **Preharvest Interval:** Do not apply within 7 days of harvest.
- **Minimum Treatment Interval:** Do not make applications less than 14 days apart.
- Do not make more than four applications per crop.
- Do not make more than two consecutive applications per crop.
- Do not apply more than a total of 8.5 oz of Transform WG (0.266 lb ai of sulfoxaflor) per acre per year.
- Do not apply this product until after petal fall.
- If blooming vegetation is present 12 feet out from the downwind edge of the field, a downwind 12-foot on-field buffer must be observed.
- Do not use on soybeans.

Terms and Conditions of Use

If terms of the following Warranty Disclaimer, Inherent Risks of Use, and Limitation of Remedies are not acceptable, return unopened package at once to the seller for a full refund of purchase price paid. Otherwise, use by the buyer or any other user constitutes acceptance of the terms under Warranty Disclaimer, Inherent Risks of Use and Limitation of Remedies.

Warranty Disclaimer

Dow AgroSciences warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated on the label when used in strict accordance with the directions, subject to the inherent risks set forth below. Dow AgroSciences MAKES NO OTHER EXPRESS OR IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR ANY OTHER EXPRESS OR IMPLIED WARRANTY.

Inherent Risks of Use

It is impossible to eliminate all risks associated with use of this product. Plant injury, lack of performance, or other unintended consequences may result because of such factors as use of the product contrary to label instructions (including conditions noted on the label, such as unfavorable temperature, soil conditions, etc.), abnormal conditions (such as excessive rainfall, drought, tornadoes, hurricanes), presence of other materials, the manner of application, or other factors, all of which are beyond the control of Dow AgroSciences or the seller. To the extent consistent with applicable law all such risks shall be assumed by buyer.

Limitation of Remedies

To the extent permitted by law, the exclusive remedy for losses or damages resulting from this product (including claims based on contract, negligence, strict liability, or other legal theories), shall be limited to, at Dow AgroSciences' election, one of the following:

1. Refund of purchase price paid by buyer or user for product bought, or
2. Replacement of amount of product used

Dow AgroSciences shall not be liable for losses or damages resulting from handling or use of this product unless Dow AgroSciences is promptly notified of such loss or damage in writing. In no case shall Dow AgroSciences be liable for consequential or incidental damages or losses.

The terms of the Warranty Disclaimer, Inherent Risks of Use, and Limitation of Remedies cannot be varied by any written or verbal statements or agreements. No employee or sales agent of Dow AgroSciences or the seller is authorized to vary or exceed the terms of the Warranty Disclaimer or Limitation of Remedies in any manner.

EPA accepted 10/14/16

NOTES

Dow AgroSciences

Transform® WG

INSECTICIDE

ISOCLAST™ ACTIVE

For control or suppression of aphids, fleahoppers, plant bugs, stink bugs, whiteflies and certain psyllids, scales, and thrips on: canola (rapeseed) (subgroup 20A), root and tuber vegetables (crop groups 1A and 1B), potatoes (crop groups 1C and 1D), succulent, edible podded, and dry beans, triticale, and wheat.

Group	4C	INSECTICIDE

Active Ingredient:

sulfoxaflor	50%
Other Ingredients	50%
Total	100%

Contains 50% active ingredient on a weight basis.

Keep Out of Reach of Children

DANGER
PELIGRO

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand the label, find someone to explain it to you in detail.)

First Aid

If in eyes: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.

If swallowed: Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to by a poison control center or doctor. Do not give anything by mouth to an unconscious person.

NOTE TO PHYSICIAN: Probable mucosal damage may contraindicate the use of gastric lavage.

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-800-992-5994 for emergency medical treatment information.

Agricultural Use Requirements

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR Part 170. Refer to the label booklet under "Agricultural Use Requirements" in the Directions for Use section for information about this standard.

For additional Precautionary Statements, First Aid, Storage and Disposal and other use information see inside this label.

Notice: Read the entire label. Use only according to label directions. **Before using this product, read Warranty Disclaimer, Inherent Risks of Use, and Limitation of Remedies at end of label booklet. If terms are unacceptable, return at once unopened.**

In case of emergency endangering health or the environment involving this product, call 1-800-992-5994.

Agricultural Chemical: Do not ship or store with food, feeds, drugs or clothing.

EPA Reg. No. 62719-625 99075386

Produced for
Dow AgroSciences LLC
9330 Zionsville Road
Indianapolis, IN 46268

NET WEIGHT 8 LB

(01) 0 06 62974 74267 8

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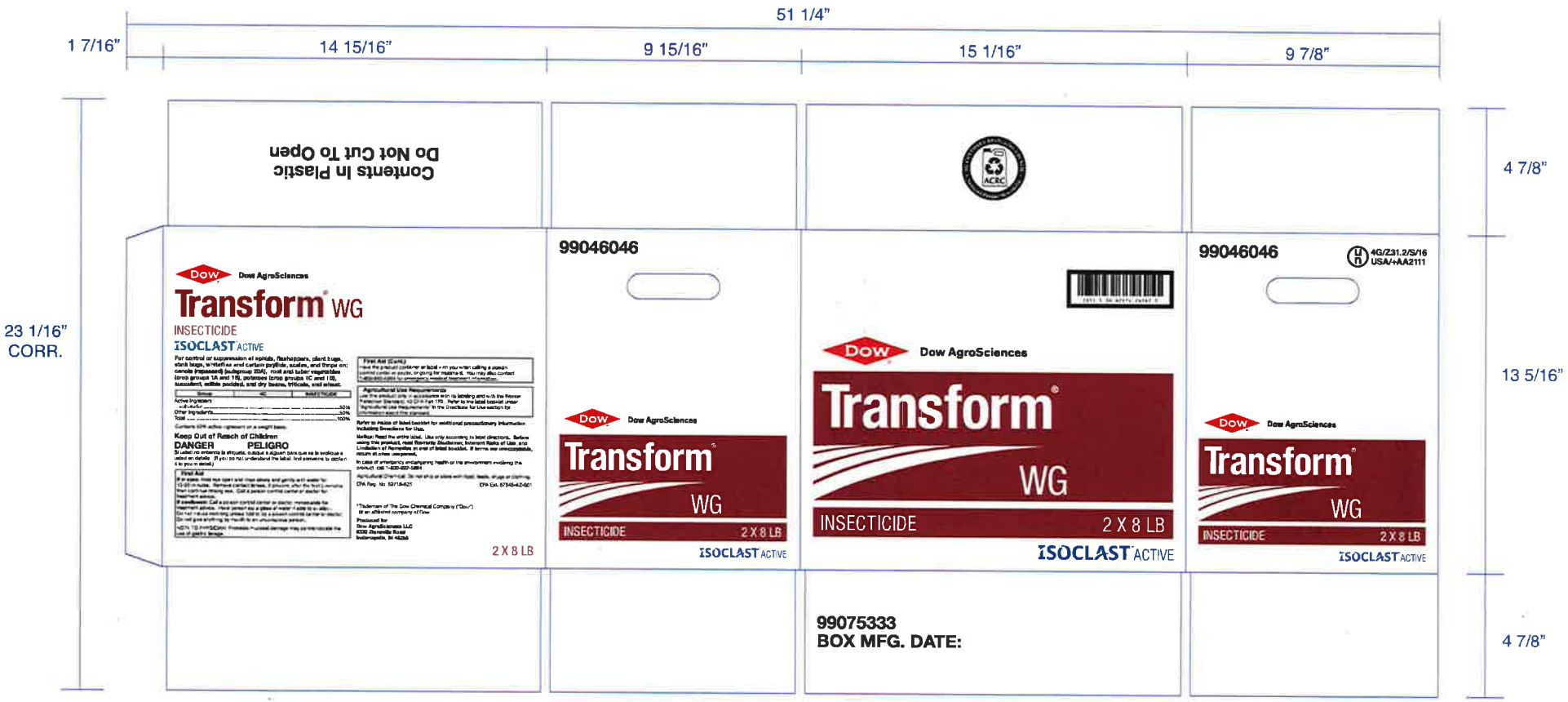
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4G/Z31.2/S/16
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Dow AgroSciences

SAFETY DATA SHEET

DOW AGROSCIENCES LLC

Product name: TRANSFORM™ WG Insecticide

Issue Date: 11/13/2015
Print Date: 11/13/2015

DOW AGROSCIENCES LLC encourages and expects you to read and understand the entire (M)SDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

1. IDENTIFICATION

Product name: TRANSFORM™ WG Insecticide

Recommended use of the chemical and restrictions on use
Identified uses: End use insecticide product

COMPANY IDENTIFICATION
DOW AGROSCIENCES LLC
9330 ZIONSVILLE RD
INDIANAPOLIS IN 46268-1053
UNITED STATES

Customer Information Number: 800-992-5994
info@dow.com

EMERGENCY TELEPHONE NUMBER
24-Hour Emergency Contact: 800-992-5994
Local Emergency Contact: 352-323-3500

2. HAZARDS IDENTIFICATION

Hazard classification
This material is hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29CFR 1910.1200.
Combustible dust

Label elements

Signal word: **WARNING!**

Hazards
May form combustible dust concentrations in air

Precautionary statements

Prevention
Keep away from heat/sparks/open flames/hot surfaces. No smoking.

Ground/bond container and receiving equipment.
Use explosion-proof electrical/ ventilating/ lighting/ equipment.
Take precautionary measures against static discharge.

Other hazards
No data available

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical nature: Mixture
This product is a mixture.

Component	CASRN	Concentration
Sulfoxaflor	946578-00-3	50.0%
Kaolin	1332-58-7	24.5%
Titanium dioxide	13463-67-7	0.5%
Balance	Not available	25.0%

4. FIRST AID MEASURES

Description of first aid measures
General advice: If potential for exposure exists refer to Section 8 for specific personal protective equipment.

Inhalation: Move person to fresh air. If person is not breathing, call an emergency responder or ambulance, then give artificial respiration; if by mouth to mouth use rescuer protection (pocket mask etc). Call a poison control center or doctor for treatment advice.

Skin contact: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

Eye contact: Hold eyes open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eyes. Call a poison control center or doctor for treatment advice. Suitable emergency eye wash facility should be available in work area.

Ingestion: No emergency medical treatment necessary.

Most important symptoms and effects, both acute and delayed: Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), any additional important symptoms and effects are described in Section 11: Toxicology Information.

Indication of any immediate medical attention and special treatment needed
Notes to physician: No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient. Have the Safety Data Sheet, and if available, the

product container or label with you when calling a poison control center or doctor, or going for treatment.

5. FIREFIGHTING MEASURES

Suitable extinguishing media: Water. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam.

Unsuitable extinguishing media: No data available

Special hazards arising from the substance or mixture
Hazardous combustion products: During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include and are not limited to: Nitrogen oxides. Carbon monoxide. Carbon dioxide.

Unusual Fire and Explosion Hazards: Do not permit dust to accumulate. When suspended in air dust can pose an explosion hazard. Minimize ignition sources. If dust layers are exposed to elevated temperatures, spontaneous combustion may occur. Dense smoke is produced when product burns.

Advice for firefighters
Fire Fighting Procedures: Keep people away. Isolate fire and deny unnecessary entry. Consider feasibility of a controlled burn to minimize environment damage. Foam fire extinguishing system is preferred because uncontrolled water can spread possible contamination. Soak thoroughly with water to cool and prevent re-ignition. Cool surroundings with water to localize fire zone. Contain fire water run-off if possible. Fire water run-off, if not contained, may cause environmental damage. Review the "Accidental Release Measures" and the "Ecological Information" sections of this (M)SDS.

Special protective equipment for firefighters: Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves). Avoid contact with this material during fire fighting operations. If contact is likely, change to full chemical resistant fire fighting clothing with self-contained breathing apparatus. If this is not available, wear full chemical resistant clothing with self-contained breathing apparatus and fight fire from a remote location. For protective equipment in post-fire or non-fire clean-up situations, refer to the relevant sections.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: Isolate area. Keep unnecessary and unprotected personnel from entering the area. Refer to section 7, Handling, for additional precautionary measures. Spilled material may cause a slipping hazard. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

Environmental precautions: Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information. Spills or discharge to natural waterways is likely to kill aquatic organisms.

Methods and materials for containment and cleaning up: Contain spilled material if possible. Small spills: Sweep up. Collect in suitable and properly labeled containers. See Section 13, Disposal Considerations, for additional information. Large spills: Contact Dow AgroSciences for clean-up assistance.

7. HANDLING AND STORAGE

Precautions for safe handling: Keep out of reach of children. Keep away from heat, sparks and flame. No smoking, open flames or sources of ignition in handling and storage area. Avoid contact with eyes, skin, and clothing. Do not swallow. Avoid breathing dust or mist. Wash thoroughly after handling. Use with adequate ventilation. Good housekeeping and controlling of dusts are necessary for safe handling of product. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION.

Conditions for safe storage: Store in a dry place. Store in original container. Do not store near food, foodstuffs, drugs or potable water supplies.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure limits are listed below, if they exist.

Component	Regulation	Type of listing	Value/Notation
Kaolin	ACGIH	TWA Respirable fraction	2 mg/m3
	OSHA Z-1	TWA total dust	15 mg/m3
	OSHA Z-1	TWA respirable fraction	5 mg/m3

RECOMMENDATIONS IN THIS SECTION ARE FOR MANUFACTURING, COMMERCIAL BLENDING AND PACKAGING WORKERS. APPLICATORS AND HANDLERS SHOULD SEE THE PRODUCT LABEL FOR PROPER PERSONAL PROTECTIVE EQUIPMENT AND CLOTHING.

Exposure controls

Engineering controls: Use local exhaust ventilation, or other engineering controls to maintain airborne levels below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, general ventilation should be sufficient for most operations.

Individual protection measures

Eye/face protection: Use chemical goggles.

Skin protection

Hand protection: Chemical protective gloves should not be needed when handling this material. Consistent with general hygienic practice for any material, skin contact should be minimized.

Other protection: No precautions other than clean body-covering clothing should be needed.

Respiratory protection: Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated by your risk assessment process. For most conditions no respiratory protection should be needed; however, if discomfort is experienced, use an approved air-purifying respirator.
The following should be effective types of air-purifying respirators: Organic vapor cartridge with a particulate pre-filter.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	
Physical state	Granules.
Color	White
Odor	Mild
Odor Threshold	No test data available
pH	7.05 1% *CIPAC MT 75.1*
Melting point/range	No test data available
Freezing point	Not applicable
Boiling point (760 mmHg)	Not applicable
Flash point	**closed cup** Not applicable
Evaporation Rate (Butyl Acetate = 1)	Not applicable
Flammability (solid, gas)	May form combustible dust concentrations in air
Lower explosion limit	Not applicable
Upper explosion limit	Not applicable
Vapor Pressure	Not applicable
Relative Vapor Density (air = 1)	Not applicable
Relative Density (water = 1)	No test data available
Water solubility	No test data available
Partition coefficient: n-octanol/water	No data available
Auto-ignition temperature	*EC Method A16* none below 400 degC
Decomposition temperature	No test data available
Kinematic Viscosity	Not applicable
Explosive properties	Not explosive *Mechanical Impact @ 20.25 inches*
Oxidizing properties	No significant increase (>5C) in temperature. *EPA OPPTS 830.6314 (Oxidizing or Reducing Action)*
Bulk density	0.42 g/cm3 *CIPAC MT 33*
Molecular weight	No data available

NOTE: The physical data presented above are typical values and should not be construed as a specification.

10. STABILITY AND REACTIVITY

Reactivity: No dangerous reaction known under conditions of normal use.

Chemical stability: Thermally stable at typical use temperatures.

Possibility of hazardous reactions: Polymerization will not occur.

Conditions to avoid: Exposure to elevated temperatures can cause product to decompose.

Incompatible materials: None known.

Hazardous decomposition products: Decomposition products depend upon temperature, air supply and the presence of other materials. Decomposition products can include and are not limited to: Carbon monoxide. Carbon dioxide. Nitrogen oxides. Toxic gases are released during decomposition.

11. TOXICOLOGICAL INFORMATION

Toxicological information appears in this section when such data is available.

Acute toxicity

Acute oral toxicity
Very low toxicity if swallowed. Harmful effects not anticipated from swallowing small amounts.

As product:
LD50, Rat, > 2,000 mg/kg No deaths occurred at this concentration.

Acute dermal toxicity
Prolonged skin contact is unlikely to result in absorption of harmful amounts.

As product:
LD50, Rat, > 5,000 mg/kg No deaths occurred at this concentration.

Acute inhalation toxicity
Prolonged exposure is not expected to cause adverse effects. Based on the available data, respiratory irritation was not observed.

As product:
LC50, Rat, male and female, 4 Hour, dust/mist, > 5.35 mg/l OECD Test Guideline 403

Skin corrosion/irritation
Essentially nonirritating to skin.

Serious eye damage/eye irritation
May cause slight eye irritation.
May cause slight corneal injury.

Sensitization
Did not demonstrate the potential for contact allergy in mice.

For respiratory sensitization:
No relevant data found.

Specific Target Organ Systemic Toxicity (Single Exposure)
Evaluation of available data suggests that this material is not an STOT-SE toxicant.

Specific Target Organ Systemic Toxicity (Repeated Exposure)
For the active ingredient(s):
In animals, effects have been reported on the following organs:
Liver.

Carcinogenicity
For the active ingredient(s): Has caused cancer in laboratory animals. However, the effects are species specific and are not relevant to humans. A risk assessment has been conducted for this product and has shown, that under normal handling, the minor components will not pose a hazard.

Teratogenicity
For the active ingredient(s): Has caused birth defects in lab animals at high doses. In laboratory animals, excessive doses toxic to the parent animals caused decreased weight and survival of offspring. However, the effects are species specific and are not relevant to humans. These concentrations exceed relevant human dose levels.

Reproductive toxicity
For the active ingredient(s): In animal studies, has been shown to interfere with reproduction. However, the effects are species specific and are not relevant to humans. These concentrations exceed relevant human dose levels.

Mutagenicity
In vitro genetic toxicity studies were negative. For the active ingredient(s): Animal genetic toxicity studies were negative.

Aspiration Hazard
Based on physical properties, not likely to be an aspiration hazard.

12. ECOLOGICAL INFORMATION

Ecotoxicological information appears in this section when such data is available.

Toxicity

Acute toxicity to fish
Material is highly toxic to aquatic organisms on an acute basis (LC50/EC50 between 0.1 and 1 mg/L in the most sensitive species tested).

LC50, Oncorhynchus mykiss (rainbow trout), semi-static test, 96 Hour, 19.5 mg/l, OECD Test Guideline 203 or Equivalent

Acute toxicity to aquatic invertebrates
EC50, Daphnia magna (Water flea), semi-static test, 48 Hour, > 100 mg/l, OECD Test Guideline 202 or Equivalent

EC50, Midge (Chironomus riparius), static test, 96 Hour, 0.48 mg/l

Acute toxicity to algae/aquatic plants
ErC50, diatom Navicula sp., Growth inhibition, 72 Hour, Growth rate inhibition, > 100 mg/l

Toxicity to Above Ground Organisms
Material is slightly toxic to birds on an acute basis (LD50 between 501 and 2000 mg/kg).

oral LD50, Colinus virginianus (Bobwhite quail), 1655mg/kg bodyweight.

oral LD50, Apis mellifera (bees), 48 Hour, 0.153micrograms/bee

contact LD50, Apis mellifera (bees), 48 Hour, 0.224micrograms/bee

Toxicity to soil-dwelling organisms
LC50, Eisenia fetida (earthworms), 14 d, survival, 1.050 mg/kg

Persistence and degradability

Sulfoxaflor

Biodegradability: Material is not readily biodegradable according to OECD/EEC guidelines.

Biodegradation: 0 %
Exposure time: 28 d
Method: OECD Test Guideline 310

Theoretical Oxygen Demand: 1.90 mg/mg

Photodegradation
Test Type: Half-life (indirect photolysis)
Sensitizer: OH radicals
Atmospheric half-life: 7.762 Hour
Method: Estimated.

Kaolin

Biodegradability: Biodegradation is not applicable.

Titanium dioxide

Biodegradability: Biodegradation is not applicable.

Balance

Biodegradability: No relevant data found.

Bioaccumulative potential

Sulfoxaflor

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).
Partition coefficient: n-octanol/water(log Pow): 0.802 at 20 °C Measured

Kaolin

Bioaccumulation: Partitioning from water to n-octanol is not applicable.

Titanium dioxide

Bioaccumulation: Partitioning from water to n-octanol is not applicable.

Balance

Bioaccumulation: No relevant data found.

Mobility in soil

Sulfoxaflor

Potential for mobility in soil is very high (Koc between 0 and 50).
Partition coefficient(Koc): 40 Measured

Kaolin

No relevant data found.

Titanium dioxide
No data available.

Balance
No relevant data found.

13. DISPOSAL CONSIDERATIONS

Disposal methods: If wastes and/or containers cannot be disposed of according to the product label directions, disposal of this material must be in accordance with your local or area regulatory authorities. This information presented below only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. If the material as supplied becomes a waste, follow all applicable regional, national and local laws.

14. TRANSPORT INFORMATION

DOT

Not regulated for transport

Classification for SEA transport (IMO-IMDG):

Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.(Sulfoxaflor)
UN number	UN 3077
Class	9
Packing group	III
Marine pollutant	Sulfoxaflor
Transport in bulk according to Annex I or II of MARPOL 73/78 and the IBC or IGC Code	Consult IMO regulations before transporting ocean bulk

Classification for AIR transport (IATA/ICAO):

Proper shipping name	Environmentally hazardous substance, solid, n.o.s.(Sulfoxaflor)
UN number	UN 3077
Class	9
Packing group	III

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations. Additional transportation system information can be obtained through an authorized sales or customer service

representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

15. REGULATORY INFORMATION

OSHA Hazard Communication Standard
This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312
Fire Hazard

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Section 313
This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Pennsylvania Worker and Community Right-To-Know Act:
The following chemicals are listed because of the additional requirements of Pennsylvania law:

Components	**CASRN**
Kaolin	1332-58-7

California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986)
WARNING: This product contains a chemical(s) known to the State of California to cause cancer.

United States TSCA Inventory (TSCA)
This product contains chemical substance(s) exempt from U.S. EPA TSCA Inventory requirements. It is regulated as a pesticide subject to Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) requirements.

16. OTHER INFORMATION

Hazard Rating System
NFPA

Health	Fire	Reactivity
1	0	0

Revision
Identification Number: 101193916 / A211 / Issue Date: 11/13/2015 / Version: 3.0
DAS Code: GF-2372
Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

Legend

ACGIH	USA. ACGIH Threshold Limit Values (TLV)

OSHA Z-1	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
TWA	8-hour, time-weighted average

Information Source and References
This SDS is prepared by Product Regulatory Services and Hazard Communications Groups from information supplied by internal references within our company.

DOW AGROSCIENCES LLC urges each customer or recipient of this (M)SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this (M)SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific (M)SDSs, we are not and cannot be responsible for (M)SDSs obtained from any source other than ourselves. If you have obtained an (M)SDS from another source or if you are not sure that the (M)SDS you have is current, please contact us for the most current version.

Cotton and Grain Producers of the Lower Rio Grande Valley

P.O. Box 531622 Harlingen, Texas 78553

December 8, 2017

To: Kevin Haack
Texas Department of Agriculture
P.O. Box 12847
Austin, TX 78711

Re: Section 18 Request for Sulfoxaflor use in 2018 Texas Cotton for Control of Tarnished Plant Bug

Our association represents growers of cotton, grain sorghum, and corn in the three county Rio Grande Valley area. We produced cotton on 195,000 acres in 2017 and expect to have approximately 200,000 acres in 2018.

In 2015 and 2016, we experienced significant pest pressure from the Tarnished Plant Bug. Increases in plant bug and stink bug pressure are common in areas once boll weevil spraying begins to subside as a result of successful eradication efforts.

Tarnished Plant Bug is a very difficult to control pest. The only currently available, marginally effective pesticides are acephate at 0.9 pounds a.i. per acre and dicrotophos at 0.5 pounds a.i. per acre.

Research and experiences from other states indicate that Transform brand Sulfoxaflor at 1.50 to 2.25 ounces of formulated material per acre is the most effective insecticide for control of Tarnished Plant Bug. Transform is used at rates far below those of the alternative organophosphate insecticides, and it is much less disruptive to beneficial insects and arthropods than the alternatives.

Cotton and Grain Producers of the LRGV supports a Section 18 request for the use of Transform in cotton for control of Tarnished Plant Bug, and urges EPA to make this insecticide available for the 2018 growing season. Please bear in mind that our season is a full two months ahead of cotton in the mid-South or north Texas, and that in the past, we have experienced problems with Tarnished Plants Bugs as early as the month of May.

Sincerely,

Webb Wallace

Webb Wallace, Ph.D.
Executive Director

TEXAS A&M AGRILIFE RESEARCH AND EXTENSION
CENTER AT CORPUS CHRISTI

TEXAS A&M AGRILIFE EXTENSION

December 4, 2017

Kevin Haack, Coordinator for Pesticide Product Evaluation and Registration
Texas Department of Agriculture
1700 N. Congress Ave.
Austin, TX 78711

Dear Mr. Haack,

This letter is in support of a Section 18 for Transform (sufloxaflor) to control the tarnished plant bug, *Lygus lineolaris*, on cotton grown in Texas for 2018. I am an Assistant Professor of Entomology for Texas A&M AgriLife Extension located in Corpus Christi where I have responsibilities providing outreach and applied research on key cotton pests. I have over 30 years of experience in agriculture including scouting, academia, and industry. My roles have required close contact with farmers and other agricultural professionals. My experiences with farmers have taught me the importance of crop budgets and careful management of crops to meet yield goals within tight budgetary parameters. Unexpected issues within a production season can eliminate profitability of the crop and may affect repayment of bank loans.

The tarnished plant bug is a late-season pest of cotton in Texas. It damages fruit by piercing and feeding on small developing bolls. Their feeding activity on lint and seed often results in death or abortion of damaged bolls. The loss of these late-developing bolls reduces yield and profit of the crop

In 2015 Transform lost its Section 3 label on cotton. Loss of this insecticide has forced cotton farmers in Texas to use less consistent products for managing tarnished plant bug in Texas. Most of the current labeled products have a short residual and many of the insecticides have a broad spectrum of activity eliminating beneficial arthropods. Subsequently, this makes possible secondary pest outbreaks, greater insecticide use, and reduced yields.

Transform has much longer residual activity than other labeled insecticides for tarnished plant bug, is highly specific for sucking insect pests and has very low activity on beneficial arthropods. These benefits mean that farmers can gain a longer period of suppression against tarnished plant bug when compared with other options without disrupting beneficial activity. The advantages this insecticide has over other currently labeled products allows me to strongly support a section 18 for Transform 50WG on cotton for control of tarnished plant bug.

Sincerely,

Robert Bowling

Robert Bowling
Assistant Professor and Extension Entomology Specialist
Texas A&M Agrilife Research and Extension Center at Corpus Christi

TEXAS A&M AGRILIFE EXTENSION

December 8, 2017

Kevin Haack, Coordinator for Pesticide Product Evaluation and Registration
Texas Department of Agriculture
1700 N. Congress Ave.
Austin, TX 78711

Dear Kevin Haack,

This letter is in need of a Section 18 for Transform (sufloxaflor) to control the tarnished plant bug, *Lygus lineolaris*, on cotton. I have been the IPM agent for the Lower Rio Grande Valley for the past 5 years and am currently going on my sixth year. I have noticed that tarnished plantbugs have been increasingly more present from 2014 and on in cotton in the LRGV. In 2016 we had very high tarnished plantbug pressure and were not prepared for the type of damaging infestations we had. Several organophosphates were used to control tarnished plantbug but were not as effective as needed and caused backlash in other pest problems. In 2016 it was also a very wet year, lots of moisture and I believe that played a major role in high tarnished plantbug activity. Fast forward to this year, 2017, we were expecting high populations of tarnished plantbug pressure but did not receive them. I believe it was due to the very unusually dry season we had but tarnished plantbugs were still present just not in damaging numbers. However, every season is different and following up to this year tarnished plantbugs are becoming a problem in cotton. Especially since only control method available right now for tarnished plantbug in cotton in Texas are organophosphates such as acephate, dicrotophos, and oxamyl. These organophosates are very harsh on beneficial populations, which is something my growers try to avoid because they depend on beneficials to control cotton aphid and other pest problems. Also, growers were disappointed and voiced lack of control provided by the organophosphates used to control tarnished plantbugs back in 2016.

Tarnished plantbugs when uncontrolled can greatly damage the young small developing bolls by piercing them and feeding on the juices. When these immature bolls are fed on they either die off or are aborted by the cotton plant. It is during this time that the grower can lose the upper half of the cotton plants bolls and greatly reduce yields and profit.

It is for this reason and on behalf of my growers that I strongly urge you to consider a section 18 for sufloxaflor (Transform 50WG) on cotton for control of tarnished plantbugs in 2018 growing season. I just want my growers to be able to be prepared for a tarnished plantbug infestation with a product they trust and know has been proven effective on tarnished plantbugs in other states and has worked well in their cotton management programs. So why not ours here in South Texas? Thank you for your time and attention.

Sincerely,

Danielle Sekula
Extension Agent- IPM
Texas A&M AgriLife Extension/ District 12
2401 East Highway 83/ Weslaco, TX 78596
Tel. 956. 968.5581 ext. 5608
Danielle.Sekula@ag.tamu.edu